



CASE STUDY: **ARCADIA UNIFIED SCHOOL DISTRICT**

UniFi Provides Wireless Coverage to Arcadia Unified School District in California

Ubiquiti Networks™ UniFi® is a cost-effective solution that provides excellent Wi-Fi performance.

UniFi Controller software provides intuitive mapping and easy configuration, so UniFi is quick to deploy.

UniFi Access Points are easy to install, so the school district's maintenance crew are able to handle installation.

Ubiquiti UniFi products support schools and universities in their mission to improve education quality and optimize collaboration between administration and faculty. One good example is the UniFi deployment at the Arcadia Unified School District in Arcadia, California, USA.

Located 17 miles northeast of downtown Los Angeles, the district includes 12 schools and support offices. Almost 10,000 students attend schools taught by 400 teachers and supported by 200 administration and staff personnel.



Installing the UniFi AP in a classroom at an elementary school

REPLACING THE OLD WITH THE NEW

Previously, the district ran two major wireless networks, each managed by a Wi-Fi controller device. When one of the two Wi-Fi controller devices died in September 2012, the Technology & Information Services team realized that they couldn't afford to replace the controller with the same product due to budgetary constraints. Instead, they looked for a more affordable alternative.

The team heard about Ubiquiti UniFi and carefully evaluated it, including its software-based controller capabilities. The team used the UniFi Access Points (APs) in a pilot program at the middle school with the highest wireless density. They started with a 3-pack of UniFi APs. Within an hour, the team installed and configured the UniFi APs, which quickly came online.

Overall, it took less than \$1500 USD to deploy 20 UniFi APs at the pilot school. After three months, the deployment was deemed a success, and the team began deploying UniFi at other schools.

"Because of UniFi's impressive price point, we can afford better coverage: one AP for every 2-3 classrooms, instead of 4-5 classrooms, even during the worst budget times."

Scott Bramley, Director of Technology & Information Services



WI-FI COVERAGE FOR THE DISTRICT



Using UniFi Controller in data center



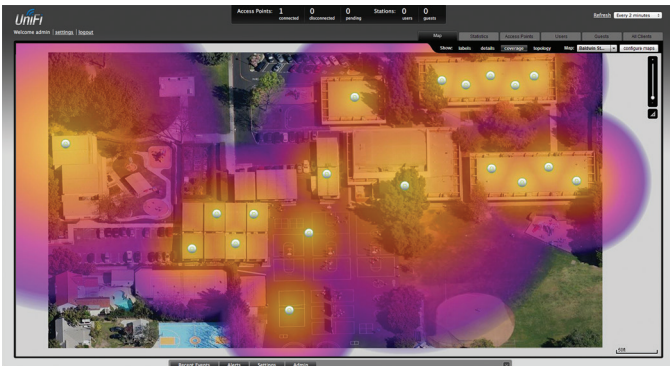
Computer lab and library at elementary school

DEPLOYING UNIFI

The UniFi APs are easy to install, so the school district's maintenance crews handled installation. The Technology & Information Services team used the UniFi Controller software for planning and configuration. They used the Maps feature to determine coverage, and then they used DNS to detect and register new UniFi APs.

"The UniFi Controller is incredibly easy to use... The maps are really handy; I can just look at a school map to find out the status of every AP."

Eric Sandberg, Network Systems Analyst



UniFi Controller Map – AP coverage at Baldwin Stoker Elementary School

The UniFi Controller software is bundled with the UniFi AP hardware and can be installed on a server, so there is no separate cost or annual fee. The UniFi APs operate independently of the UniFi Controller; now that there is no centralized controller routing traffic, local logins on local computers are quicker than before.

There was minimal impact on the existing infrastructure. The UniFi APs were paired with Ubiquiti Instant 802.3af Adapters on an as-needed basis so they can be powered by 802.3af PoE switches.

The high school is the final school scheduled for UniFi deployment. When the district's second Wi-Fi controller device died in July 2013, the Technology & Information Services team accelerated the schedule for the high school. They plan to use the UniFi 802.11ac Wi-Fi Access Point, UAP-AC, for enhanced performance.

UNIFI IN ACTION

Fiber goes to the district's network center, which distributes bandwidth to the various locations. Each school has a switch that sends fiber at 100 Mbps to the classrooms. UniFi APs are hardwired to the classroom switches via Ethernet.

UniFi AP Model	Number	Purpose
UAP	177	Provide standard wireless coverage
UAP-Outdoor	12	Provide outdoor coverage
UAP-LR	10	Provide long-range coverage
UAP-PRO	2	Support heavy usage

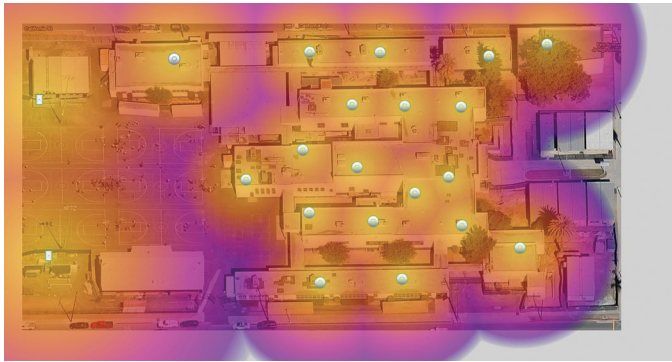
"I walked the entire campus today and was able to use my iPad in every classroom. Our students are reporting that our laptops are logging in much faster than they did with our previous system."

Nadia Hillman, Principal, Foothills Middle School





UNIFI AT A MIDDLE SCHOOL



UniFi Controller Map – AP coverage at First Avenue Middle School

Future plans include the UAP-AC, which will be used for indoor Wi-Fi coverage at the high school and educational center.

Locations	Number of UniFi APs	Planned Number of New UniFi APs
Six elementary schools	118	
Three middle schools	65	
High school		65
Alternative high school and learning center	3	
District office	3	1
Maintenance yard	5	
Educational center (under construction)		12

TECHNOLOGY'S IMPACT ON LEARNING ENVIRONMENT

Smartphones, tablets, and notebook computers all use Wi-Fi, and the Arcadia Unified School District plans to implement a new educational initiative, 1:1 computing, in the fall of 2014. 1:1 computing calls for each student to be equipped with a computing device. All instructional materials will be stored on this Wi-Fi enabled device; there will be no separate textbooks. The Technology & Information Services team is future-proofing the Wi-Fi capacity now, so it will be available when the wireless density significantly increases with the advent of 1:1 computing.

Wi-Fi coverage is used in various ways. Wireless laptops connected to projectors are replacing older equipment such as DVD and VHS players. Network-based programs, including live or on-demand programming, will eventually replace cable TV. The Technology & Information Services team is also preparing for standardized online testing. The Smarter Balanced Assessment is an electronic state test aligned to the Common Core State Standards; all schools in 22 states (out of 50) are preparing to use this test.

“The first real test of our new wireless system was the Smarter Balanced Assessment pilot. One of our test locations was a classroom with 35 laptops connected through a single access point (UniFi AP PRO). The assessment ran perfectly over multiple days.”

Dr. Daniel Hacking, Principal, Dana Middle School

As the district renovates classrooms and facilities, the team upgrades the technologies. Each classroom will get an interactive whiteboard (a large touchscreen that controls a computer connected to a projector), and network cabling will be upgraded to support greater bandwidth.



UNIFI OUTDOORS



UniFi AP-Outdoor covering basketball courts

WIRELESS TECHNOLOGY IN ADMINISTRATION

Every year students register for a new school year. Staff personnel set up stations in an open area, such as basketball courts, and use wireless laptops to efficiently process tasks such as class enrollment, textbook assignments, and class photos. The wireless laptops stay synchronized with student information in the administration system so there are no discrepancies.

“During the last few years of financial challenges, we have forced ourselves to reach beyond the traditional and mass-marketed systems to ensure we are getting the best product for the best price. I am proud to stand before the community and our school board to share the performance we are getting from Ubiquiti Networks for a fraction of the price. As we often tell our students, ‘Doing your homework always pays off.’”

David Vannasdall, Deputy Superintendent, Arcadia Unified School District



UniFi AP-Outdoor installed outside of stadium press box

EVENT WI-FI

Every year in April, Arcadia High School holds the Arcadia Invitational, the largest outdoor meet for high school track and field events in the United States. Previously, the press used a classroom or temporary Ethernet cabling to send reports. For this year’s event in April 2013, a UAP-Outdoor was installed outside of the press box to cover most of the stadium. The Technology & Information Services team ran Gigabit fiber to the UAP-Outdoor for enhanced bandwidth.

FUTURE NETWORK EXPANSION

The Technology & Information Services team plans to increase outdoor wireless coverage to give teachers the flexibility to go outside for instruction. For Physical Education (PE) teachers, outdoor wireless coverage will provide the capability to take roll outside on a wireless tablet, whether the class is held in the middle of a soccer field or at the tennis courts.

“What’s amazing is that there were no major hurdles when we needed to replace our old controllers but had less to spend... It was refreshing to find UniFi.”

Greg Gazanian, Assistant Director of Technology & Information Services

Visit the Arcadia Unified School District at site.ausd.net

For more deployment case studies, visit: www.ubnt.com/customers

